

Managing Asthma and Allergy Triggers at School

What is the Hazard or Problem:

Asthma has become an epidemic now affecting over 9.5% of Massachusetts residents, with even higher rates among children. Most asthma can be managed with a combination of appropriate medications and avoidance of asthma triggers including allergens, irritants, and viral infections, but too many asthma triggers persist unnecessarily. Allergens (organic proteins that produce an allergic reaction) include dust mites, molds, animal danders, pollens and cockroaches. Irritants include smoke, fumes and odors (from cleaning products, paints, pesticides, diesel and ozone). Although schools have many diverse environments from classrooms to art and science rooms to cafeterias, and even printshops and auto shops, students are not subject to OSHA requirements, and there are too many asthma triggers in most school environments.

The Solution:

- It is important for schools to be educated about asthma triggers and to take reasonable steps to avoid triggering asthma flare-ups.
- Asthma triggers may vary from child to child (e.g., one may be allergic to guinea pigs and another may only be allergic to cats). It is important for the school nurse to obtain an Asthma Action Plan for each child which lists their asthma triggers, as well as their typical symptoms and their medications.
- The school nurse should be a member of the school team which tries to reduce asthma triggers. Documentation about asthma flare-ups and IAQ problems may help to identify things that are triggering asthma in the school.

Applicable Regulations/Consensus Standards:

- We understand that OSHA does not protect school age children.
- Section 504 of the Rehabilitation Act of 1973 protects the rights of persons with handicaps (including hidden disabilities) in programs and activities that receive federal financial assistance.
- Massachusetts law and regulation prohibit unnecessary idling of all motor vehicles (including school buses) over five minutes.

Who in your Town or School Can Help:

The school nurse, facility manager, maintenance staff, child's physician.

Who to contact for free Government or Other Assistance with the Problem:

U.S. EPA – Tools for Schools kits – EPA IAQ Hotline – 1-800-438- 4318. Or contact Eugene Benoit at EPA Region 1: 617-918-1639.

Tools for Schools offers a comprehensive approach to reducing asthma triggers through a process of developing a school team for educating the school about asthma triggers, monitoring the facility and making repairs before problems become too extensive.

Mass. Environmentally Preferable Products Procurement Program of the state Operational Services Division has created a list of cleaning products that have been screened for a range of health and environmental impacts. Contact Marcia Geegler, Program Manager, 617-720-3356 (Marcia.geegler@osd.state.ma.us) or Dimitriy Nikolayev, Project Specialist at 617-720-3351 (dmitriy.nikolayev@osd.state.ma.us).

Further Reading (include Electronic Resources if Applicable):

www.asthmaandallergies.org - Information about controlling asthma and allergies from the Asthma & Allergy Foundation of America/New England Chapter (AAFA/NE). Link to AAFA national website at www.aafa.org.

Has order form for materials and publications including “You Can Control Asthma© workbooks for kids and families, “Power Breathing™ Program for teens, “Asthma Management at School/Meeting in a Box©

“Strategies for Addressing Asthma Within a Coordinated School Health Program”. Centers for Disease Control and Prevention (CDC) guide can be downloaded at www.cdc.gov/healthyyouth/healthtopics.asthma.

Asthma and Allergy Foundation of America



New England Chapter

220 Boylston Street
Chestnut Hill, MA 02467
617-965-7771
Toll Free: 1-877-2-ASTHMA
website: www.aafa.org

Asthma Basics

Living Well with Asthma

People with asthma can lead

PHYSICALLY ACTIVE lives

simply by knowing what triggers their episodes and taking the appropriate preventive medications.

*Currently there is NO CURE
for asthma.*

However medical researchers worldwide are making tremendous progress in learning what causes asthma and how to prevent episodes.



*Asthma and Allergy
Foundation of America
New England Chapter*

What is Asthma?

Asthma is a disease affecting the airways that carry air into and out of the lungs. People with asthma have sensitive airways that become irritated and swollen when certain "trigger" elements, like pollen and pet dander, enter their airways. Symptoms of asthma commonly include coughing, wheezing, shortness of breath, tightness in the chest, and/or excessive mucus. These symptoms vary from person to person and also may decrease over time and re-surface later in life.

Anyone can get Asthma!

*Many
Olympic
athletes have
asthma.*

Although asthma develops most commonly in children before the age of five and adults in their thirties, anyone can develop asthma. You are most likely to develop asthma if one of your parents has it and if you have allergies.

What Causes Asthma?

Asthma is triggered by various elements in our environment both natural and man-made. The following are some of the elements that trigger the airways to become inflamed and make breathing difficult.

Allergens such as:

- dust mites, plant pollen, pet dander, molds

Irritants such as:

- smoke from cigarettes, wood fires and charcoal grills, fumes from household cleaners, paint, perfumes, and gasoline
- dry wind, cold air and sudden weather changes

- exercise and activities that make you breathe harder
- laughing, yelling, and crying when they cause changes in breathing patterns

Infections such as:

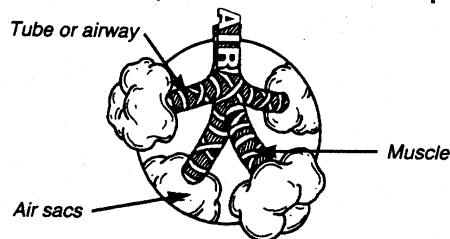
- common colds, sore throats, and sinus infections

Asthma Episodes

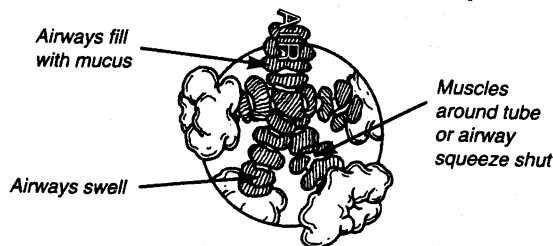
What's happening?

When triggers are present asthma sufferers experience an episode, in which they may cough, wheeze, and/or have difficulty breathing. This happens as the lining of the airways becomes swollen and irritated by the trigger. Along with the swelling, the muscles around the airways tighten, and mucus clogs the airways. As a result the airways are very narrow and the sufferers feel like they are trying to breath through a straw that is stuffed with cotton.

The Lungs' Airways BEFORE an Asthma Episode



The Lungs' Airways AFTER an Asthma Episode



*At least **80%** of
children and **50%** of
adults with asthma also
have allergies.*

Asthma Episodes ARE Preventable

Asthma is a chronic disease that must be constantly monitored. Symptoms may be better or worse at times, but asthma sufferers need to be aware of how well they are breathing. It is important to find out all you can about asthma and your own triggers, how to relieve symptoms, and **HOW TO PREVENT THEM**. Obviously avoiding triggers is the first step, but many of the triggers in our environment cannot be avoided. Every person who suffers from asthma needs to develop an asthma management plan with their doctor.

Asthma Management Plan

- 1** Identify and minimize contact with your asthma triggers.
- 2** Understand and take medications as prescribed.
- 3** Monitor your asthma and recognize early signs that it is worsening.
- 4** Know what to do when your asthma is worsening.

1 Know Your Triggers



You need to know what triggers your episodes, so you can avoid these things or prepare yourself for contact with them. Make notes of any contact with possible triggers in a diary that you review with your doctor. Reviewing this information will help you find trends in the occurrence of your episodes. Allergy testing may also be needed to identify triggers. With this information you will know what to avoid and when to take preventive medications.

2 Take Your Medication

Medication is available to prevent episodes and to relieve episodes that have already begun. Many asthma medicines are taken through a metered dose inhaler (MDI). Proper use of your inhaler is essential to treatment. See your doctor for detailed instructions on how to use your inhaler.



Stop Episodes Before They Start

Asthma episodes can be avoided if you take long term control medications that reduce your body's response to your triggers.

Long-Term Control Medications

- ▶ Called antiinflammatory because they prevent or reduce swelling and inflammation in the airways.
- ▶ Prevent asthma episodes because airways are less sensitive to the triggers.
- ▶ Needed for people who have symptoms more than once or twice per week.
- ▶ Inhaled: *Cromolyn, Nedocromil Sodium, Corticosteroids*, Antileukotrienes*
- ▶ Oral: *Corticosteroids***
- ▶ New: *Antileukotrienes* are a new type of medication that actually prevent the production or activity of leukotrienes, chemicals in your body that cause narrowing of airways, swelling, and mucus production.

*Inhaled corticosteroids are safe when taken as directed. They are different than the anabolic steroids taken illegally by some athletes.

**Ask your doctor about possible side-effects of oral corticosteroids.

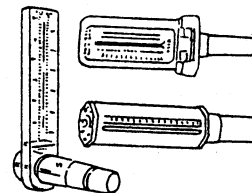
Quick-Relief Medications

- ▶ Called bronchodilators because they open airways by relaxing the tightened muscles.
- ▶ Used during an episode to relieve symptoms.
- ▶ Using a bronchodilator more than 3 times per week means you need an antiinflammatory.
- ▶ Inhaled: *Short-acting and Long-acting Beta Agonists*
- ▶ Oral: *Beta Agonists (tablets or syrup), Theophylline*

3 Monitor Your Asthma

Symptoms can be better or worse at various times. Don't be fooled into thinking your asthma is gone. Use a peak flow meter to measure your breathing.

Asthma episodes rarely occur without warning, but sometimes the symptoms come on so slowly that they are difficult to notice. To be in control of your asthma, you must look for early warning signs: chest tightness, shortness of breath, and tiredness. Take your medication as soon as possible.



*Don't let
asthma
control
your life*

Don't ignore your asthma because you have been feeling better. You must be aware and in control of your asthma at all times.

4 Know What to Do

Keep a diary of your asthma episodes. Are they more frequent and more severe? Are they less frequent and less severe? Work together with your doctor and discuss the trends in your asthma episodes. It is important to know which medicines work for you and how they work, so that you can take the right ones for each situation.

Asthma and Allergy Foundation of America



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617-965-7771

Toll Free: 1-877-2-ASTHMA

website: www.aaafa.org

Basics Allergy

Do You Have an Allergy or a Cold?

<i>Symptom</i>	<i>Allergy</i>	<i>Cold/Infection</i>
Nasal Discharge	Clear, thin, watery Nonirritating	Clear, changing to thick, yellow & green Local irritation
Fever	No	Low grade
Muscle Aches	No	Often
Itching	Ears, nose, throat	Rarely
Sneezing	Common in "spells"	Sometimes
Duration	Weeks to months	7 to 10 days
Seasonal	Often	Rarely



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Foundation of America
New England Chapter***

Living Well with Allergies

What are Allergies?

Allergies are an overreaction of your body's immune system to a harmless foreign substance that enters the body, like pollen or animal dander. Substances that cause this reaction are called allergens. The job of your immune system is to identify foreign substances in the body and get rid of them. An allergic reaction occurs when an allergen enters the body and your sensitive immune system overreacts to it by producing antibodies to fight off the allergen. These antibodies cause the release of histamines and other body chemicals that result in runny nose, itchy and watery eyes, sneezing, and swelling.

Anyone Can Get Allergies!

*Over 50 million
Americans suffer
from allergies*

Although people are not born with allergies, they often inherit the tendency to develop them. Allergies often begin in childhood, but can develop or re-emerge later in life.

Allergens Enter Our Bodies

There are several types of allergens, and they enter our bodies in different ways.

<i>Allergen</i>	<i>Entry point</i>
pollen, grasses, weeds, house dust, mold, animal dander	▶ inhaled through nose & lungs
shellfish & other fish, peanuts & other nuts, other foods	▶ ingested through mouth or inhaled
penicillin and other injectable drugs, stinging insect venom	▶ injected or taken orally
poison ivy, oak, sumac, chemicals (dyes, deodorant, cosmetics)	▶ absorbed through skin

Allergic Reactions

Just as there are different allergens, there are also different types of allergic reactions. Reactions to allergens range from runny nose, itchy eyes and sneezing to hives and life threatening anaphylaxis.

Allergic Rhinitis is an inflammation of the mucus membranes in the nose, throat, sinuses, and/or ear passages that occurs when you inhale an allergen. Symptoms include stuffy and itchy nose, sneezing, clear nasal discharge, and itchy ears and roof of the mouth. This reaction can be seasonal or year round.

Allergic Conjunctivitis is an eye allergy that causes red, itchy, watery eyes.

Allergic Asthma is an inflammation of the airways into the lungs. Inhaled allergens can trigger symptoms, including coughing, wheezing, shortness of breath, tightness in the chest, and/or excessive mucus.

Anaphylaxis is a generalized allergic reaction that may include hives, shortness of breath, drop in blood pressure, and life-threatening loss of consciousness.

Atopic Dermatitis (eczema) is a red, itchy, dry rash usually on the elbows, knees, and skin folds. It may be the result of an allergic reaction.

Urticaria, or hives, also appear on the skin, but take the form of itchy welts that appear all over the body.

Contact Dermatitis is an itchy rash that usually breaks out on the skin where an allergen has touched it (for example, poison ivy).

- 1 Personal and medical history (including records of reactions)
- 2 Physical examination, particularly lungs and sinuses
- 3 Tests to determine allergens

Diagnosis of Allergies

Allergy Testing

Skin Tests are the most accurate and least expensive method for detecting allergic antibodies.

Prick/Scratch Test involves placing a small drop of the allergen on the skin and then lightly pricking or scratching the skin with a needle.

Intradermal Test involves injecting a small amount of the allergen into the outer layer of skin.

In both of these tests you have an allergy if you have a local skin reaction within twenty minutes.

Blood Tests, or RAST tests, are used to confirm that your body is producing the antibodies that cause allergies. These tests are more expensive and are used for people who have a skin condition or are taking medication that interferes with skin testing. A sample of your blood is sent to the laboratory where the lab measures the amount of antibodies produced to fight the allergen.

Patch Tests are used to determine if you have contact dermatitis. A small amount of the allergen is placed on your skin and covered with a bandage. After 48 hours the area is checked for a rash.

At least 80% of children and 50% of adults with asthma also have allergies.

Special Food Allergy Tests

The **Food Challenge Test** involves first eliminating the suspected allergen from your diet and then administering suspected food allergens in slowly increasing amounts under careful medical supervision.

Elimination Diet requires that you eat a restricted diet of only certain foods. Gradually you add or reintroduce other foods. Together, you and your doctor determine which foods are allergens based on which you ate prior to a reaction.

Effective Allergy Treatment

- 1 **Education** - Learn about your condition and how to avoid your allergens.
- 2 **Medication** - Learn to use prescription and nonprescription medications to prevent and relieve allergic reactions.
- 3 **Allergen Immunotherapy** - for people with life threatening allergies or respiratory allergies. Not effective for food allergies.

1 Education About Allergens

The best way to prevent allergy symptoms and reduce your need for medication is to avoid your allergens as much as possible. For important tips talk with your doctor or call for other pamphlets about avoiding allergens in your environment.



2 Take The Right Medication

Talk with your doctor about which medications are best for your symptoms and your body. It is important to take the proper medicine for maximum results.

Available in Prescription & Nonprescription

Antihistamines	► relieve rashes, hives, sneezing, itching, and runny nose
Decongestants*	► reduce stuffiness by shrinking swollen membranes in nose
Eye Drops	► relieve burning or bloodshot eyes
Cromolyn Sodium Nasal Sprays	► prevent inflammation that causes nasal congestion
Corticosteroid Creams or Ointments	► relieve itchiness and stop the spread of rashes. These are not the same as anabolic steroids.

*Warnings: Use for more than 3 consecutive days can result in "rebound" effect which increases swelling and stuffiness in nasal passages. Combined antihistamine/decongestants often contain ibuprofen or aspirin which can cause asthma episodes.

Prescription Medications

Corticosteroid Nasal Sprays	► reduce inflammation that causes nasal congestion, runny nose, and sneezing
Oral Corticosteroids**	► reduce swelling and stop severe allergic reactions
Epinephrine (Adrenaline)	► the only medication that will stop a life threatening anaphylactic attack. Must be administered immediately upon first sign of allergic reaction.

**Warning: The potential for side-effects should be discussed with your doctor.

3 Allergy Shots

Allergy shots, or immunotherapy, are useful for people who cannot avoid their allergens or control their symptoms with medication. Injections of very small doses of your allergens are gradually increased over time until you build up a resistance to them. Immunotherapy is particularly useful for people with life-threatening reactions to stinging insects and those with respiratory allergies. Allergy shots are not effective in eliminating hives or allergies to food and feathers.

Don't let allergies control your life!

Find out what is the best way to relieve your allergies. Call your doctor today.

See a Doctor if...

- you **CANNOT AVOID** your allergens, and prescription and nonprescription medicines are not working.
- you are taking **NONPRESCRIPTION** allergy medicines for more than **3 MONTHS** (total) in a year.
- you are having **SIDE-EFFECTS** from nonprescription allergy medicines.
- your allergies are **YEAR-ROUND**.
- your symptoms are severe enough to **DISRUPT** school, work, or your **LIFE-STYLE**.